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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,972	03/22/2004	Bart De Cock	920522-95773	1363
23644	7590	09/19/2006	EXAMINER	
BARNES & THORNBURG LLP			TANG, MINH NHUT	
P.O. BOX 2786			ART UNIT	
CHICAGO, IL 60690-2786			PAPER NUMBER	

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/805,972	Applicant(s) COCK ET AL.	
	Examiner Minh N. Tang	Art Unit 2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-15 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-15 and 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-3, 5-15 and 17-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claims 1 and 12, the limitation "storing the sensed voltage amplitude values" is not supported by the original specification. Applicant, in the Remarks filed on July 28, 2006, asserted that "A supported by the description on page 12, line 24 to page 13, line 4 of the application as original filed, the stored sensed amplitude values are integrated, filtered, ..., and thus are further processed after being stored." Those descriptions are not found in such pages. Throughout the original specification, only the limitation "storing sensed voltage values" (see, for example, page 5, lines 8-10) is found instead of storing sensed voltage amplitude values.

Claims 2-3, 5-11, 13-15 and 17-20 are rejected since they depend on rejected base claims.

For examination purposes, the limitation "voltage amplitude values" is interpreted as -- voltage values --.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 5-15, and 17-20, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Fincher (U.S.P. 4,851,755).

As to claims 1, 7 and 12, Fincher discloses, in Fig. 3, an apparatus and method for detecting rotation of a rotor (12) of a multiple phase motor (10) with bipolar drive, the motor (10) comprising at least a first and a second energizable motor stator winding (14a, 14b), the apparatus comprising means (32) for sequentially and alternately sensing a back electromagnetic force (voltage pulse induced in a deenergized stator winding due to back EMF) on the first and the second motor stator winding (14a, 14b) at or near the end of a period of a non-energized (i.e., deenergized stator winding) state thereof, wherein the apparatus furthermore comprises means (56) for storing the sensed voltage values (a predetermined number of consecutive pulses) of the first and second motor stator windings (14a, 14b).

As to claims 2 and 14, Fincher discloses in Fig. 3, the means (32) for sequentially and alternately sensing has means (52) for sensing a voltage (i.e., induced voltage pulses) on the first motor stator winding (i.e., the deenergized stator winding) during energizing of the second motor stator winding (i.e., energized stator winding), and means (52) for sensing of a voltage (i.e., induced voltage pulses) on the second motor

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stator winding (i.e., the deenergized stator winding) during energizing of the first motor stator winding (i.e., energized stator winding).

As to claims 3 and 15, Fincher discloses in Fig. 3, the means (32) for sequentially and alternately sensing has a fixed or adjustable relative position in a non-energized state time-window (see column 6, lines 35-38).

As to claims 5 and 17, Fincher discloses in Fig. 3, the means (32) for sensing has means (52) for sensing multiple voltage samples (61-64), further comprising means (56) for storing the multiple samples (61-64).

As to claim 6, Fincher discloses in Fig. 3, the motor (10) is driven in microstepping operation.

As to claims 8 and 18, Fincher discloses in Fig. 3, means (54) for outputting a detection signal (65) indicative of a stalled condition of the motor (10).

As to claims 9 and 19, Fincher discloses in Fig. 3, means (54) for outputting a detection signal (65) indicative of a rotation of the motor rotor (12) or derivatives thereof versus time.

As to claims 10 and 20, Fincher discloses in Fig. 3, means (50) for sensing a unipolar signal across one non-energized motor stator winding (deenergized stator winding) by connecting one terminal of the motor stator winding (14a, 14b) to a fixed or reference potential while measuring the voltage at an other terminal of that non-energized motor stator winding (deenergized stator winding).

As to claims 11 and 13, Fincher discloses in Fig. 3, excluding a three-phase motor with bipolar drive with star connected coils.

Response to Arguments

5. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's arguments filed on July 28, 2006 have been fully considered but they are not persuasive:

Applicant, in the Remarks pages 6-7, asserted "the method according to US 4,851,755 does not comprise storing the sensed voltage amplitude values of the first and second motor stator winding in a memory device."; however, the limitation above (i.e., voltage amplitude values) is not supported by the original specification.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh N. Tang whose telephone number is (571) 272-1971. The examiner can normally be reached on M-F (7:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ha T. Nguyen can be reached on (571) 272-1678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


MINH NHUT TANG
PRIMARY EXAMINER

9/14/06